WEAR VOLUME 171, NUMBERS 1–2, JANUARY 1994

Contents

Improvement of wear resistance by EDM with tungsten carbide P/M electrode 1
M.S. Shunmugam, P.K. Philip (Madras, India) and A. Gangadhar (Hyderabad, India)

The effect of liquid crystals on joint lubrication 7
B.I. Kupchinov, S.F. Ermakov, V.G. Rodnenkov, S.N. Bobrysheva (Gomel, Belarus) and E.D. Beloenko (Minsk, Belarus)

Fretting wear behaviour of 2Cr13 stainless steel before and after laser treatment 13
D. Yang, X. Zhang and Q. Xue (Lanzhou, China)

In situ observation and study of the unlubricated wear process 19
W. Wang and S. Wen (Beijing, China)

The sliding friction and wear behavior of single-crystal, polycrystalline and oxidized silicon 25
S. Venkatesan and B. Bhushan (Columbus, OH, USA)

Water-lubricated sliding of Al_2O_3 against steel 33
A. Ravikiran and B.N. Pramila Bai (Bangalore, India)

Thermohydrodynamic analysis of finite-width journal bearings with non-Newtonian lubricants 41
S.-M. Ju and C.-I. Weng (Tainan, Taiwan)

Machining characteristics of titanium with rotary electro-discharge machining 51
J.S. Soni and G. Chakraverti (Hyderabad, India)

Analysis of the tribological behaviour and wear mechanisms of titanium nitride coating 59
J.F. Lin and J.H. Horng (Tainan, Taiwan)

Express investigations of wear processes by means of cylindrical counterbodies. Part I: Calculations and technique 71
Yu.P. Kozyrev, B.M. Ginzburg, N.D. Priemskii, D.G. Tochilnikov and V.P. Bulatov (St Petersburg, Russia)

Wear mechanisms and tribo mapping of Al_2O_3 and SiC in dry sliding 77
A. Blomberg, M. Olsson and S. Hogmark (Uppsala, Sweden)

Characterization by transmission electron microscopy of debris formed on plasma spray and hard PVD ceramic coatings 91
X. Ye, J.P. Celis, M. De Bonte and J.R. Roos (Heverlee, Belgium)

A new method of evaluating the abrasion resistance of wires. Part I: Presentation of the device and mathematical background 99
S. Pensaert, A. Van Peteghem and F. Debuyck (Gent, Belgium)

A new method of evaluating the abrasion resistance of wires. Part II: Theoretical model on the wear rate and experimental work on coated and uncoated wires 109
S. Pensaert, A. Van Peteghem and F. Debuyck (Gent, Belgium)

Wear and seizure of binary Al–Si alloys 115
A. Somi Reddy, B.N. Pramila Bai, K.S.S. Murthy and S.K. Biswas (Bangalore, India)

Unlubricated sliding wear of ceramics against graphitized cast irons 129
L. Fang, Y. Gao, L. Zhou and P. Li (Xian, China)

Friction and wear changes in synovial joints 135
G.W. Stachowiak (Nedlands, WA, Australia), A.W. Batchelor (Singapore, Singapore) and L.J. Griffiths (Nedlands, WA, Australia)

Secondary structure formation and wear mechanisms for solid lubricant coatings under friction in vacuum 143
G.D. Gamulya, I.L. Lebedeva, Yu.V. Vvedensky and T.P. Yukhno (Kharkov, Ukraine)

The solid particle erosion of polymer matrix composites 149
M. Roy (Hyderabad, India), B. Vishwanathan (Bangalore, India) and G. Sundararajan (Hyderabad, India)

The wear properties of an alumina–aluminosilicate fibre hybrid reinforced Al–Si alloy in a lubricated condition 163
J. Jiang, A. Ma, H. Liu and R. Tan (Jiangsu, China)

Analysis of rolling contact spall life in 440C bearing steel 169
P.C. Bastias, G.T. Hahn, C.A. Rubin, V. Gupta (Nashville, TN, USA) and X. Leng (Mesa, AZ, USA)

Elsevier Sequoia

Thermal considerations for the edge guiding of thin magnetic tape in a longitudinal tape transport 179
B. Bhushan (Columbus, OH, USA), H.F. Hinteregger and A.E.E. Rogers (Westford, MA, USA)

Mechanism of rubber abrasion. Part I: Abrasion pattern formation in natural rubber vulcanizate. 195
Y. Fukahori and H. Yamazaki (Tokyo, Japan)

Analysis of the resistance to motion in a sliding contact 203
T.A. Stolarski (Uxbridge, UK)

Solid particle erosion of heat-treated $Ni_{80}P_{20}$ 211
T.S. Lee, J.L. Routbort, K.C. Goretta (Argonne, IL, USA), R.B. Schwarz, T.J. Tiainen and A. Mayer (Los Alamos, NM, USA)

Passivation and repassivation kinetics of iron-aluminum alloys in 1 N H_2SO_4 using potential step and scratch tests 215
B.W. Madsen (Washington, DC, USA) and T.A. Adler (Albany, OR, USA)

Advanced multilevel solution for thermal elastohydrodynamic lubrication of simple sliding line contacts 227
R.-T. Lee and C.-H. Hsu (Taiwan, China)

SEM studies of material damage to silicon carbide ceramics by erosive wear and static indentation 239
D.F. Wang and Z.Y. Mao (Hangzhou, China)

Bio Notes/About the Authors 243

Author Index 247

Subject Index 249